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**U.S. MARINE CORPS ENLISTED RETENTION:
AN ANALYSIS OF STAKEHOLDER INCENTIVES FOR
THE RETENTION OF TIER 1 FIRST-TERM MARINES**

by

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March 2014

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Graphical trend analysis, cross tabulation, and linear regression models were used to analyze Total Force Retention System and Total Force Data Warehouse data with quality identified using a computed submitted tier, commander's recommended tier, and modified tier score.

The findings indicate that reenlistment requests submitted within 30 days of a Marine's EAS have had negative effects on quality and outside of this window there is no observable effect on quality. Additionally, over the course of the reenlistment period, lower quality is associated with months following the start of the reenlistment period in July. The graphical analysis also suggests that the computed tier provides an objective anchor for commanders' recommendations.

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LIST OF ACRONYMS AND ABBREVIATIONS

AFQT	Armed Forces Qualification Test
AVF	all-volunteer force
CFT	Combat Fitness Test
CMC	Commandant of the Marine Corps
EAS	expiration of active service
EMC	enlisted manning community
ERTF	Enlisted Retention Task Force
FFM	fast filling military occupational specialty
FTAP	first-term alignment plan
FY	fiscal year
GT	general technical score
HQMC	Headquarters, U. S. Marine Corps
IRAM	Individual Records Administration Manual
MARADMIN	Marine Administrative Message
MCMAP	Marine Corps Martial Arts Program
MMEA	Enlisted Assignments branch
MOS	military occupational specialty
MPP	Manpower Plans and Policy
M&RA	Manpower and Reserve Affairs
OIC	officer-in-charge
NJP	non-judicial punishment
PFT	Physical Fitness Test
PTS	Perform to Serve
RELM	Reenlistment, Extension, and Lateral Move Request
SRB	selective reenlistment bonus
STAP	subsequent term alignment plan
TFDW	Total Force Data Warehouse
TFRS	Total Force Retention System

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I. INTRODUCTION

A. BACKGROUND

Why should we study retention? Recruiting efforts funnel life into the armed services, but retention is the effort that preserves the human capital developed. Retention efforts are internal recruiting measures. During a retention crisis in 2000, the Commandant of the Marine Corps at the time remarked, "Recruiting is hard work, retention equally so" (Goodrum, 2003, p. 26). This quote speaks to how retention efforts can be overlooked, but in reality, convincing the best to reenlist is much like a continuation of the recruiting that persuaded them to join the service in the first place. Military readiness is a function of the force size, occupation, and most importantly, quality (Koopman, 2007). This state of readiness depends on the convergence of recruiting and retention of valuable personnel and the Marine Corps' capability is in its personnel and not platforms. Since the Marine Corps spends a higher proportion of its budget on personnel than the other services, careful consideration should be given to identifying and retaining the best of the available human capital investment.

The Marine Corps has taken measures within the last several years to improve its reenlistment practices and policies. The latest addition is the inclusion of an objective, computed tier evaluation portion on a Marine's Reenlistment, Extension, and Lateral Move (RELM) request to help identify quality by ranking Marines against their peers within the same military occupational specialty (MOS).

B. OBJECTIVES

The primary objective of this study is to evaluate the computed tier system's impacts on retaining quality personnel for Marine Corps first-term reenlistments. Prior to the computed tier's implementation, reenlistment request acceptance relied on the timing of the application to secure a MOS boat space. The computed tier was added to RELMs to help identify quality and not just

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accept the first to reenlist. I believe that the inclusion of the computed tier has improved quality of the enlisted force.

C.   RESEARCH QUESTIONS

The primary research question involves assessing the retention of quality Marines within the established timeframe. How does quality change over the course of the reenlistment period for first-term Marines in relation to stakeholder incentives and under the recently implemented tier system? While exploring this question, Marine Corps policies are evaluated, assessing whether leadership at the unit level has the ability to identify and actively recruit the most qualified individuals to reenlist. The computed tier portion of RELMs now provides an objective quality component to an otherwise subjective request.

Secondary research questions include

- Where are incentives and objectives mismatched at each level of processing for stakeholders?
- How does a Marine's expiration of active service (EAS) impact the processing of their reenlistment request?
- Does quality change over the course of the fiscal year to include the reenlistment periods and lateral move periods?
- How has the quality of the enlisted force selected for reenlistment changed since the introduction of the tier evaluation system?

In addition to the overall reenlistment process being evaluated, the parties involved and the effects of fiscal year timelines will be reviewed.

D.   SCOPE, LIMITATIONS, AND ASSUMPTIONS

1.   Scope

The focus of this study is on the population of first-term enlisted Marines from the past six fiscal years who applied for reenlistment and what quality is retained in relation to the demand signal output by the Enlisted Assignments branch (MMEA). The computed tier calculation and the commander's

recommendation serve as indicators of quality. Assessing whether tier criteria are accurate measures of quality are beyond the scope of this study.

Supplemental performance indicators relevant to study of the tier evaluation include Physical Fitness Test (PFT) scores, Combat Fitness Test (CFT) scores, proficiency and conduct markings, rifle scores, and Marine Corps Martial Arts Program (MCMAP) belt attainment, and meritorious promotion occasions. Misconduct such as non-judicial punishments (NJP) and courts-martial are not included in the actual computation, but impose limitations on tier attainment.

2.   Limitations

Since the tier system was recently implemented in fiscal year (FY) 2011, limited quantities of data exist on Marines evaluated using the objective component. Rifle and MCMAP belt scores were not archived in the Total Force Retention System (TFRS) because the computed portion was not a requirement. Additionally, prior to FY 2010, limited to no data exists on the CFT, which is another prime component in computing a current Marine's individual score. Official scoring began in July 2009 for the CFT with a calendar year requirement initiated in January 2010 (USMC, CD&I, 2009). Discussion on how to remedy these issues is covered in detail in a later section.

3.   Assumptions

The Marine Corps tier system was developed to differentiate levels of quality in the enlisted force and given this information; the performance indicators are assumed to be appropriate predictors of success and continued service.

E.   LITERATURE REVIEW

The literature review conducted sought different perspectives outside of the Marine Corps to include other services, government entities, and third-party research firms. Literature on enlisted populations is typically concerned with quantities and incentives to retain personnel rather than the quality of those

retained and the potential effects thereafter. Historically, quality is more of an emphasis during the recruiting phase of manpower development with a focus on attracting individuals with high school educational backgrounds and qualifying Armed Forces Qualification Tests (AFQT). These two attributes have consistently been used as performance indicators of success in the armed services since the inception of the all-volunteer force (AVF).

F.   ORGANIZATION OF THIS STUDY

The manpower process is a complex system with recruiting and retention as key elements to the shaping and sustaining of end strength. The Marine Corps enlisted retention cycle is discussed from multiple perspectives as well as the evolution of the Marine Corps' reenlistment and lateral move processes.

Manpower and personnel considerations from within the past decade will provide the context for the emphasis on quality. The United States was focused on two wars abroad for close to a decade and now that mission is changing. As service members return from overseas, military strategy shifts, and budgetary issues continue to influence decision making, the size of the force is under assessment and is decreasing in response to budgetary and management decisions.

II.   BACKGROUND

General Amos, 35th Commandant of the Marine Corps (CMC), issued in his planning guidance that Marine Corps Manpower and Reserve Affairs (M&RA) "Examine and improve reenlistment procedures," to retain the most qualified instead of the "first to volunteer," and simultaneously meet manpower requirements and goals (CMC, 2010, p. 14). Shortly thereafter, in May 2011, a Marine Administrative Message (MARADMIN) was released outlining the commandant's Approved Updated Reenlistment Procedures which expanded the submission timeline for reenlistments to 90 days and introduced tier evaluation system in TFRS (USMC, 2011a). To better understand the importance and impacts of these changes, the following literature review covers the retention process, the progression of retention studies, and comparisons between the tier evaluation system and its preceding process in the Marine Corps.

A.   FIRST-TERM ALIGNMENT PLAN

1.   Mission

The FY 2014 Enlisted Retention Guidelines published the following goal in June 2013:

> The purpose of our enlisted retention efforts is to meet the requirements of our enlisted career force by retaining Marines with proven performance and demonstrated potential. We will accomplish this by focusing on the retention process at every level of command and by providing all eligible Marines with comprehensive information regarding opportunities for further service. The end state is to meet all retention requirements with the most qualified Marines and to provide all Marines eligible to reenlist in FY 14 with personal interaction throughout their chain of command regarding opportunities for further service. (p. 1)

The Enlisted Assignments branch at Manpower and Reserve Affairs publishes enlisted retention campaign guidelines annually and dissecting the commander's intent above provides the mission of the retention process. The primary purposes of a retention campaign are to meet quantity and quality goals.

The "requirements of the career enlisted force" portion speaks to the quantity goal; however, "retaining Marines with proven performance and demonstrated potential" addresses that quantity in combination with the quality of the individual is the optimal solution.

2.   Purpose

The involved nature of the retention process requires buy-in from participating stakeholders. As previously stated, the purpose of the enlisted retention campaign is only possible with support at "every level of command by providing all eligible Marines with comprehensive information regarding opportunity for future service." The long-term perspective takes into account the career force. Individuals who fall under the first term alignment plan (FTAP) are still in their initial contract but are eligible for reenlistment since their EAS falls within the current fiscal year retention campaign (MMEA, 2013). The Marines we mentor and encourage today become tomorrow's career force.

3.   End State

Effective leadership is essential to achieving the end state. The Marine Corps needs to meet "all retention requirements" to fill the appropriate number of boat spaces, or MOS quotas allotted, and meet the requirement with the "most qualified" (MMEA, 2013). The role of command influencers and stakeholders in the reenlistment process will be discussed in greater detail. The guidance provided in the Enlisted Retention and Career Development Program order reinforces the importance of retention efforts. Note that a key component in the purpose is to "conduct quality interviews" (USMC, 2010a). This responsibility of personal contact and engagement is not placed specifically on any one individual to carry out, but the implication in Marine Corps Order (MCO) 1040.31 is that it is in the best interest of leadership to be engaged in the process.

> The primary purpose is to conduct quality interviews in order to reenlist First-Term Marines to meet our career force MOS requirements and to reenlist career Marines to sustain appropriate

career force experience levels…Without a strong retention program the Marine Corps could not accomplish its career force objectives. (p. 1-1)

Processes change over time. The traditional retention process has been completed on a "first to volunteer" basis. This stands in contrast to fast-filling Marine Corps Enlisted Retention, First-Term Alignment Plan, Computed Tier, Reenlistment Quality, Career Planners, Total Force Retention System, Enlisted Career Force Planning military (FFM) occupational specialties that are processed through boards to ensure the retention of highly qualified Marines. Fast-filling MOS's are identified at the start of the reenlistment period based off of historical trends. With the computed tier in place for a couple of cycles, an updated MARADMIN gave processing preference to tier 1 computed Marines in all MOS's as a reward for their superior performance (USMC, 2013). Quantity is undoubtedly a constant goal as a function of military readiness, but the quality of the force has long-term implications for an organization that relies on an internal labor market. While it is evident that quality of the force is an identified priority in retention efforts, due consideration is also given to how retention, recruiting, and planning efforts interact in the manpower system to attain end strength.

B.   MARINE CORPS REENLISTMENT, EXTENSION, AND LATERAL MOVE REQUESTS

Several stakeholders are involved in the processing of a RELM request. Key participants in the reenlistment process are career planners and commanders. Unit level career planners are special staff officers responsible for advising commanders and Marines on reenlistment matters and as unit liaisons to the Enlisted Assignments branch (USMC, 2010a). Career planners are Marines who conducted a lateral move into the 4821 MOS community and while their role in the reenlistment process is significant, they contribute only a portion of the effort needed to retain an eligible Marine.

Unit Level

Marine Reenlisting

1. Marine visits career planner to begin a RELM request

Career Planner (CarPlan)

3. RELM is routed through staff sections and the Marine's leadership.

2. CarPlan creates RELM. The RELM now needs to be signed off on by staff sections and leadership and is routed by the Marine.

Staff Sections
SNCOIC
OIC
Co 1stSgt
Co Cmdr

Commanding Officer
Sergeant Major

4. Once vetted through the chain of command, the SgtMaj and CO place their final recommendations on the RELM.

HQMC

Career Planner Liaisons, MMEA-6 (Enlisted Retention)
5. After the RELM is submitted to MMEA-6 by the unit CarPlan, the package is reviewed by CarPlan liaisons at HQMC for correctness.

If there is no misconduct in the RELM, the package is forwarded to the FTAP chief, via the Marine's monitor, for approval.
If a misconduct issue is present in the RELM, then the package is routed to the MMEA-6 branch head via the FTAP chief and FTAP officer with inputs from the MMEA-8 branch head.

NO Misconduct

MOS Monitor

FTAP Chief
Approval

Misconduct

MOS Monitor & Monitor Head

FTAP Chief & Officer

Head, MMEA-8

Head, MMEA-6

Figure 1.   Marine Corps Reenlistment Process (after J. Gayman, Personal Communication, February 20, 2014)

Commanders are responsible for the successful implementation of a career planning program which includes retention (USMC, 2010a). To assist them in this objective, unit career planners and unit leadership have the ability to positively influence a unit's career planning program through daily interaction with their subordinates considering future service in the Marine Corps (USMC, 2010a). The influence that unit leaders exert on their subordinates should not be overlooked. Every RELM request that is processed by a unit career planner contains recommendations from key personnel in a Marine's chain of command and is endorsed by the unit's commander before submission via TFRS to MMEA.

The typical routing process starts with the Marines, as depicted in Figure 1. After meeting with a career planner, the Marine can initiate a RELM request which must be reviewed and signed off by various staff sections to verify basic eligibility in areas such as security clearance, legal, and height and weight requirements. The Marine's chain of command, both officers and enlisted, also comment on the RELM and support their recommendation with amplifying comments. The final stop before submission to Headquarters Marine Corps

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(HQMC) is with the unit commanding officer and sergeant major. The commanding officer makes a final recommendation that takes into consideration the previous comments and the career planner submits the completed package for consideration by MMEA.

At HQMC, the RELM is reviewed for quality control by career planner liaisons in the Enlisted Assignments branch. The routing of the RELM now depends upon the context of the reenlistment request. If there is no misconduct during the enlistment, the package is routed through the MOS monitor who weighs in on the competitiveness of the package within the requested occupational specialty. The FTAP chief has the authority to approve the package if the RELM meets all prerequisites.

If the RELM contains misconduct, which includes non-judicial punishment or higher, during the enlistment period or is negatively endorsed by the unit commanding officer, the request is still routed through the MOS monitor, but also the MOS monitor officer-in-charge (OIC) before review by the FTAP chief and FTAP OIC. The MMEA-6 head determines the final disposition of the RELM based on all previous recommendations.

1. Pre-tier Process

Prior to the computer tier, unit career planners managed RELM requests, while the chain of command endorsed the package, and were ultimately submitted with a final recommendation to HQMC by the requesting Marine's unit commander. A commander's endorsement could range from most favorable to least favorable using one of four verbal descriptions of the RELM to qualify their recommendation: enthusiastically recommended, recommended with confidence, recommended with reservation, or not recommended. The processing of reenlistment packages was based on a first to volunteer basis with no prioritization based on recommendation. Exception to this policy included fast filling MOS's which were MOS's with higher supply than available boat spaces.

Interest in these MOS's created designated submission periods and boards to select quality and is still in use today.

2. Computed Tier Process

The score from a computed tier resembles the structure of a Marine Corps composite score for promotion purposes. An individual's composite score consists of various performance metrics from test scores to performance and conduct evaluations while also accounting for one's time in grade and service (USMC, 2012). The Enlisted Promotion Manual, Marine Corps Order 1400.32D, with change 2, regulates the number of Marines to be promoted to corporal and sergeant through the automated composite score (2-27).

1. **Rifle Marksmanship Score** _____
2. **PFT Score** _____
3. **CFT Score** _____
4. Subtotal of lines 1+2+3 _____
5. General Military Proficiency (GMP) (Subtotal in line 4 divided by 3) _____
6. GMP Score from line 5 ____ x 100 _____
7. **Average duty profiency ____ x 100** _____
8. **Average conduct ____ x 100** _____
9. TIG (months) ____ x 5 _____
10. TIS (months) ____ x 2 _____
11. Special Duty Assignment Bonus ____ x 1 _____
12. Self-education bonus (maximum of 100 points)
  a. MarineNet/Marine Corps Institute/Extension School ____ x 15 _____
  b. College/College Level Examination Program/Vocational ____ x 10 _____
13. Command Recruiting Bonus (maximum of 100 points) ____ x 20 _____

Composite Score (sum lines 6 through 13) _____

Figure 2. Composite Score Computation (from USMC, 2012).

The composite score, by definition, is a mathematical score using recorded data in an individual's total force record for Marine Corps wide comparison to other individuals within a particular grade and MOS (USMC, 2012). Note that the criteria in Figure 2, listed in bold, are shared with the computed tier. The addition of a Marine's rifle, PFT, and CFT are considered part of a general military proficiency score. The general military proficiency score is

multiplied by 100 and added to the remaining scores. Average proficiency and conduct scores are multiplied by 100 while time in grade and time in service are also multiplied by factors with a Marine's time in grade holding more weight. Bonus points are offered as incentives for special duty assignments, education, and recruiting experiences.

After all components of the composite score are calculated, this value is compared to the cutting score for the Marine's MOS. Composite scores within the MOS that exceed the cutting score threshold are promoted to the next pay grade. If the Marine Corps is at maximum capacity for a particular skill set, then the MOS will be listed as "closed," with no four digit composite score, and therefore, no promotions go into effect that month.

The computed tier was introduced in May 2011 through MARADMIN 273/11. This change in policy created an objective component alongside the traditional subjective recommendations from the Marine's leadership. The computed tier takes into account many of the same scores as a composite score, but specifically, the physical fitness test, the combat fitness test, proficiency and conduct markings, and rifle marksmanship scores. If a Marine was meritoriously promoted during their enlistment, an additional 100 points is added to their overall standing. Under the present process, Marines who apply for reenlistment are compared to their peers who belong to the same enlistment cohort, within their MOS. Application of the computed tier can be seen in Figure 3.

CPL I. M. MARINE		
PMOS 0621		
Event	*MOS Avg* (as of 02-08-2012)	*SNM's Scores*
PFT	246	274
CFT	282	284
Proficiency	430	430
Conduct	430	430
Rifle	293	303
MCMAP	MMB - Tan Belt	MMD - Green Belt
Meritorious Promotion	N/A	0
➡	*1691*	*1751* ⬅
Legal History	*Type*	*Date*
0 NJP(s)	N/A	N/A
Tier Chart		
Tier I (10%) 91%-100%		🦅
Tier II (30%) 61%-90%		🦅🦅🦅
Tier III (50%) 11%-60%	X	🦅🦅🦅🦅🦅
Tier IV (10%) 1%-10%		🦅

Figure 3.   Marine Corps Tier Worksheet (after B. Lodge, Personal Communication, February 9, 2014)

The PFT, CFT, and rifle score values are not altered in the computed tier score. Proficiency and conduct marks are multiplied by 100 when added in the formula and each MCMAP belt level is associated with a certain number of points. If a reenlistment package contains misconduct, such as a non-judicial punishment (NJP) or higher, the computed tier for that Marine is limited based on the context of the RELM. Marines with an NJP cannot attain a computed tier higher than 2. Marines with two NJPs or record of conviction via courts-martial cannot be higher than a tier 3. The sum of all categories creates a four digit score for the Marine and is compared to their peers within the same MOS. The proportions for each tier category are preset but the cut-off scores for each percentile vary each year.

3.   Stakeholders

The success of the Marine Corps retention program relies upon the combined efforts of all stakeholders involved. The roles and responsibilities of each stakeholder are listed below.

a.   *Career Planners*

A retention crisis in 2000 prompted the Commandant of the Marine Corps to direct a two-day Marine Corps wide retention stand down (Goodrum, 2003). The Enlisted Retention Task Force (ERTF) developed by the Deputy Commandant, M&RA recommended the replication of Recruiting Command's program successes through the development of a systematic program for retention (Goodrum, 2003). As a result of the ERTF, M&RA created the 8421 MOS for, then, career retention specialists (Goodrum, 2003). In May 2010, the name for, now 4821s, was changed to career planners (USMC, 2010b). All career planners are Marines who have conducted a lateral move into the career retention field (Goodrum, 2003). With a dedicated MOS, the Marine Corps developed a dedicated force to help manage the retention process.

Career planners answer to three different stakeholders: the Marine reenlisting, their unit commander, and HQMC. The full-time effort of dedicated career planners is essential to sustaining the career force through not only FTAP candidates but also subsequent term alignment plan (STAP) Marines. In a nod to recruiting practices and to enhance their visibility and status, career planners are also provided with an additional clothing allowance to wear the dress blue uniform as prescribed (USMC, 2010a).

b.   *FTAP Marine:*

A typical enlistment is four years for an FTAP candidate but there are exceptions for additional observation or special programs (USMC, 2010a). The minimum and maximum ages for recruits are 17 and 29, respectively (http://www.marines.com/eligibility/requirements). After practically four years'

time in service, an eligible FTAP Marine can range in age from 21 to 33 years old. Understandably, reenlistment decisions can be difficult when the commitment to reenlist entails committing another four years or possibly longer to an organization.

Although the objective of this study is not to analyze reenlistment patterns or behaviors, it is relevant to address the incentives for when individuals submit their reenlistment requests. Individuals, who have fewer opportunities in the civilian sector or consider their current military career to be in jeopardy, may be more inclined to submit for reenlistment earlier than those who have more options at their disposal. In contrast, a Marine who is confident in their position in the Marine Corps as well as external opportunities in the civilian sector may choose to postpone their reenlistment while evaluating multiple options. During a period of significant drawdown, the most prudent decision by a Marine of either caliber would be to pursue opportunities in both sectors. The two extremes illustrate potentially perverse incentives through a rolling reenlistment process.

c. Small Unit Leaders

In addition to daily counseling and supervisory responsibilities, officers in charge and staff noncommissioned officers in charge have influence on a Marine's decision to reenlist. Recommendations from key leadership within the Marine's chain of command are collected on the RELM request form prior to submission to the unit sergeant major for review and the commander for final recommendation. This also includes NCOs, company commanders, other sections, but the recommendations for future service influence the unit commander who may or may not know the Marine's full potential depending on the unit's size.

d. Unit Commanders

The final recommendation provided by the commander, or the executive officer on his or her behalf holds a considerable amount of weight. The recommendation prior to the computed tier was heavily relied upon in itself for

the reenlistment disposition. With the addition of the computed tier, the commander's recommendation has the latitude to override the objective tier based on observation. The commander's recommendation should take into account the Marine's performance and potential for future service (USMC, 2010a).

e.   Monitors

Monitors belong to MMEA-8, a section adjacent to the enlisted retention within the Enlisted Assignments branch. In the reenlistment process they are kept abreast of any issues or fluctuations in MOS populations that can affect duty assignments. In the case of RELMs with misconduct or that were negatively endorsed by the unit commander, the monitor provides recommendations to MMEA-6 on the competitiveness of the Marine within their MOS and the needs of the Marine Corps with respect to assignments.

f.   Career Planner Liaisons

These career 4821 MOS Marines provide quality control for reenlistment packages that are submitted to MMEA from units across the Marine Corps. Career planner liaisons are the first stop for administrative corrections following a unit's submission.

g.   MMEA-6

The enlisted retention section within the Enlisted Assignments branch is responsible to the CMC for the career planning program (USMC, 2010a). Subordinate units within MMEA-6 manage the ERTF, FTAP, STAP, career counseling, and many other programs and policies. The head of MMEA-6 is the decision authority on RELMs with misconduct or that were negatively endorsed.

C.   NAVY REENLISTMENT PROCESS COMPARISON

The United States Navy developed a centrally controlled program in 2003 to shape the enlisted force composition (Koopman, 2007). Koopman describes

the Perform to Serve (PTS) program as a "centrally controlled, application reenlistment system with the goal of shaping the force through the movement of sailors from over manned to undermanned ratings and to manage the quality of those who reenlist by controlling the authority for reenlistment" (Koopman, 2007). The Marine Corps will rapidly approve lateral move request into high demand/low density MOS's, but the emphasis is first on primary MOS populations.

The algorithm used in this centrally controlled system was not transparent to sailors and their leadership (Koopman, 2007). In contrast, the tier computation formula for Marines is available on the RELM and displays the performance metrics, which are used with input from the individual's personal record. Comparison to the Marine's peers is published at the unit level, and the calculation is generated for all Marines with the current reenlistment cohort.

Koopman states that the only two ways to improve retention quality is through pay incentives and a centralized reenlistment system based on quality (Koopman, 2007). Pay incentives vary by occupational specialty supply within respective service branches and so do the systems by which to identify such quality enlistees; however, the only consistent reward for superior performance, which can be linked to quality of the individual, are promotion processes (Koopman, 2007).

In many ways, the Marine Corps computed tier mimics the promotion process in place for E-4s and below. For each MOS, a cutting score is generated which serves as the cut-off point for those eligible for promotion. The individual Marine has a composite score based on their performance metrics and time in service and grade. If a Marine's individual composite score exceeds the established cutting score for that month, and all other minimum time in grade and service requirements, then they are promoted.

The Navy differs from this approach in that promotion algorithms are generated from advancement exams, previous exam scores, promotion recommendations, and awards (Koopman, 2007). PTS was modified during its

implementation to measure performance at the time of reenlistment (Koopman, 2007). This modification is particularly important since Sailors who applied under PTS were compared to other Sailors within their enlisted manning community during the month they chose to reenlist. In contrast, Marines who reenlist under the computed tier system are compared to their peers within their MOS, who are from the same year cohort.

D.   PREVIOUS STUDIES

1.   Behavior Studies

Previous studies include assessments on cost, psychological and sociological behaviors. Reenlistment decisions are personal decisions. Workplace and personal compensation is frequently studied to identify how to incentivize high performers to stay with an organization (retention behavior). A previous analysis of retention surveys indicates that basic pay, job security, retirement pay, job enjoyment, and medical care are key factors in an individual's decision to stay military (Kocher & Thomas, 2000). What is also important in a Marine's decision to stay is shared values and pride in the Marine Corps (Kocher & Thomas, 2000).

2.   Economic Models

One of the earliest studies on reenlistment behavior using economic theory was the Annualized Cost of Leaving (ACOL) model (Weiss et al., 2002). ACOL attempted to compare pecuniary and non-pecuniary factors of the military versus civilian options. Reenlistment models like ACOL are beneficial to study the effects of pay and bonuses for short-term reenlistment projections (Quester & Thomason, 1984). Another model created to study reenlistment behavior compared civilian occupations to Navy specialties estimating long-term projections using historical relationships (Quester & Thomason, 1984). Previous multivariate models have focused on pecuniary and non-pecuniary factors that influence a service member's decision to stay in the military (Weiss et al., 2002).

This study focuses on a process for identifying quality and not whether current practices serve as an appropriate means for incentivizing retention.

3.   Definitions of Quality

While many studies have focused on the reenlistment behavior of service members, the definition of quality has consistently been gauged by an individual's AFQT and education attainment (Koopman, 2007). The AFQT is a composite score constructed from elements in the Armed Service Vocational Aptitude Battery (ASVAB) for service potential and the only score that the Marine Corps shares with its sister services (USMC, M&RA, 2009). While the AFQT may be a good indicator for completion of a first term, this may not be the best indicator for person-organization fit and potential for future service. A study of the Navy's PTS program found that in certain months, the average AFQT scores for those disapproved for reenlistment were higher than those approved (Brookshire, 2007). If the definition of quality is primarily based on a predictor of success like AFQT then this statistic could appear troubling. The Marine Corps defines aptitude through a general technical (GT) calculation whose formula is specific to the Corps and should not be confused with other services' GT scores (USMC, M&RA, 2009).

4.   Recruiting Quality

Benchmarks for quality recruits have traditionally included an individual's AFQT score and high school diploma graduation status (Kapp, 2013). The AFQT is the only composite score that the Marine Corps shares in common with its sister services (USMC, M&RA, 2009). Subcomponents of the AFQT are derived from the ASVAB, which tests an individual's developed abilities and is a measure of one's academic and occupational success for military placement (official-ASVAB.com). Again, quality is stressed more so for recruits than during the retention phase.

As recently as FY 2011 and 2012, the Navy, Marine Corps, and Air Force saw the highest recruit quality levels since the beginning of the all-volunteer force

(Kapp, 2013). While recruiting quality goals focus on surpassing 60% above average scores on the AFQT and greater than 90% high school diploma graduates, the performance metric for retention has been primarily quantitative in nature (Kapp, 2013).

Testimony from the 2009 House Armed Services Committee hearing on recruiting and retention in the military services referred to the increase of active component reenlistment in the Marine Corps from 31% in FY 2007 to 36% in FY 2008 (Recruiting, Retention, and End Strength Overview, 2009). While increases in volunteers are notable, the factors that motivate volunteers to reenlist may not necessarily attract the right person for the organization. Selective reenlistment bonuses (SRB) are also used to assist with retention efforts; however, the use of SRBs to target the retention of certain skills sets speaks to the issue of attaining the right quantity of skills sets and to a lesser extent, quality (Recruiting, Retention, and End Strength Overview, 2009). Monetary compensation may not always attract the best qualified, but it does provide add some level of attractiveness to military service in comparison to civilian alternatives.

5. Relationship to Recruiting

Today's accession cohort is tomorrow's FTAP retention cohort. As a closed system, the quantity and quality of recruit that is obtained by the military service will be, provided the individual completes the first enlistment, the available pool for retention and advancement in the career force. Recruiting is considered the "life blood" of the military since entry-level personnel ultimately develop and advance to positions of authority in the hierarchical rank structure (Kapp, 2013).

From 2004-2007, the security situation in Iraq resulted in about 700 armed service member casualties a year (Kapp, 2013). These numbers would drop significantly even when casualties in Afghanistan rose (Kapp, 2013). The increased role and risk apparent to service members during overseas conflicts strained recruiting efforts. During high operational tempo periods, from FY 2005-

2007, recruiting efforts were challenged and some service branches began to accept lower quality recruits in order to meet quotas (Kapp, 2013). The surge in demand for manpower created a focus on quantity and on average; this can cause aggregate quality to decrease.

Another concern surrounding recruiting efforts, as noted in testimony by all-volunteer force expert Dr. Curtis Gilroy, from the House of Representatives Armed Services Committee hearing of 2009, is that youth influencers have changed over time. Eligible youths are less likely to be influenced to join military service and even after all qualifiers are applied, only 25% of the targeted population is eligible for service (Recruiting, Retention, and End Strength Overview, 2009). At the time this statement was made in 2009, it was forecasted that budgetary issues on the horizon, which is being experienced now, would be directed at recruiting and retention programs with a subsequent draw down in forces (Recruiting, Retention, and End Strength Overview, 2009).

What is also notable about Marine Corps recruiting efforts is that during the manpower build-up to support and sustain operations abroad by meeting a force structure of 202,000, the Corps attained this goal two years ahead of schedule (Recruiting, Retention, and End Strength Overview, 2009). The unique recruiting campaigns for the Marine Corps and historical consistency in this arena of the manpower realm have helped provide a steady supply of individuals for the reenlistment pool. Out of all the services, the Marine Corps also has higher proportions of active enlisted Marines in their first-term enlistment which implies a larger pool of eligible candidates for career service (Congressional Budget Office [CBO], 2006). With a bottom heavy pyramid force structure, the Marine Corps has the latitude to be more selective in the quality of Marine that reenlists.

E.   HISTORICAL AND MANAGERIAL RELEVANCE

Quality can become the center of attention during drawdown periods. As major military operations in the Middle East come to a close, the military services

are poised to reduce forces much like the response to the close of the Cold War. Fewer personnel and thus, smaller recruiting and retention goals, were products of the late 1990s. What also accompanied the drawdown were a burgeoning civilian economy, better wages, education opportunities, and changes in demographics (Kapp, 2013).

Downsizing can be a result of decreased demand for an organization's services or conversely, when an organization is flourishing but aims to increase operating efficiencies (Chadwick, Hunter, & Walston, 2004). The former scenario rather than the latter applies to the Marine Corps. From a human resource perspective, the preservation of human and social capital is important to sustaining a competitive advantage. Downsizing in a fiscally constrained environment may assist with direct labors costs initially; however, strategic human resource management points to lowered long-term competitive advantage, in terms of productivity, if required skills and organizational structures are removed carelessly (Chadwick, Hunter, & Walston, 2004).

1. Recent Past

Ongoing military operations in the Middle East since 2001 increased operational tempo, mobilization of reserves, and casualties and led many to speculate that recruiting and retention rates would be negatively affected (Kapp, 2013). In fact, recruiting efforts in FY 2005-2007 for the Department of Defense suffered slightly and some of the military services accepted lower levels of recruiting to meet established quotas (Kapp, 2013). In 2008, the civilian economy and its high unemployment rate boosted recruiting and retention efforts once again (Kapp, 2013).

2. Marine Corps' Current Standings

For the past decade, the Marine Corps has met or exceeded retention goals (Kapp, 2013). Retention efforts, in a way, are like a second round of recruiting and have been positively affected by the same factors that have led to positive recruiting outcomes (Kapp, 2013). The Marine Corps focus for FY 2014

efforts is not only on quantity, but quality as the drawdown goes into effect. An update to the FY 2014 Enlisted Retention Campaign was published in January 2014 and shifted the reenlistment submission deadline far to the left (USMC, 2014). The MARADMIN states that quality in the retained force is increasing and reenlistment opportunities are limited with a new force structure of 188,500 at the end of FY 2014 (USMC, 2014).

3.   Future

There is a delicate balance to maintain in military retention. In this closed system, if too many service members stay in, then promotions slow and force shaping measures such as voluntary and involuntary separations come into play; meanwhile, if too many service members depart, then the experience inventory dries up and the manpower system takes years to recuperate (Kapp, 2013). These issues have also been compounded by changes to structure requirements as the Marine Corps total force decreases from 202,000.

III. METHODOLOGY

A. DATA OVERVIEW

MMEA provided pooled, cross-sectional data from TFRS grouped by reenlistment era. Data from FY 2009 to 2011 captures the pre-tier reenlistment process while data from FY 2013 to 2014 captures the computed tier reenlistment process. Data from FY 2012 was not available from TFRS due to a system migration and associated corruption issues. Data from FY 2014 is truncated to February 2014 only because the reenlistment period is still in effect at the time of this study. Each fiscal year contains individual data on Marines who applied for reenlistment and were subsequently disapproved, declined an offer to reenlist, or chose to accept reenlistment. Figure 4 shows the outcomes for each step in the reenlistment process, given that an individual survives to the reenlistment decision point.
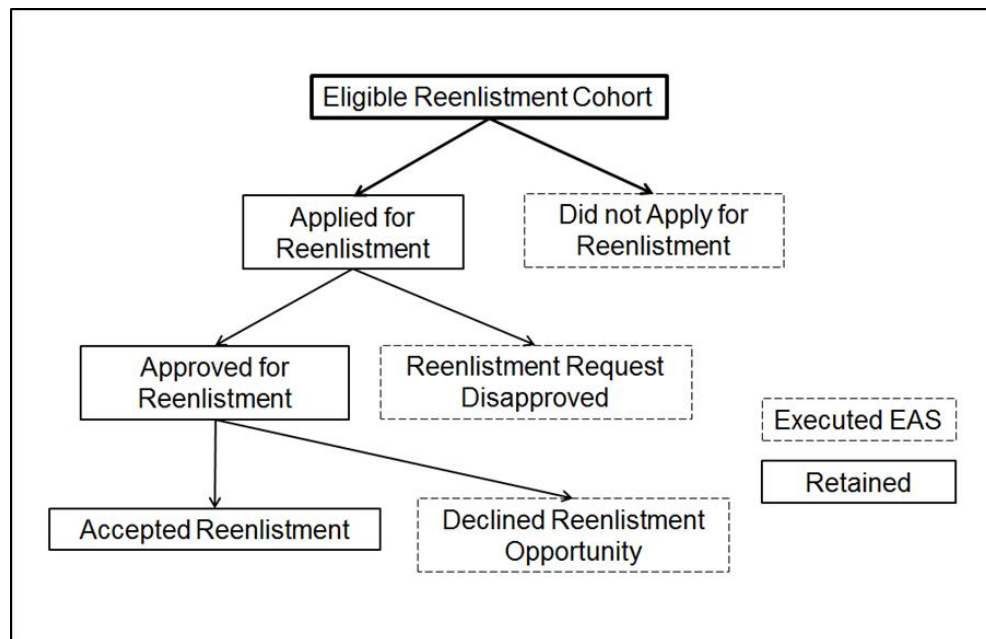

Figure 4. Personnel Flow in the Reenlistment Process

The Total Force Data Warehouse (TFDW) also provided data for this study on the entire reenlistment population for FY 2009 to 2011. This data was requested to replicate the computed tier formula. Since computed tiers are now generated for all Marines, regardless of their decision to apply for reenlistment, this data was necessary in order to generate the same tier proportions for reenlistment data prior to the computed tier. Pre-tier data contains a commander's recommendation which is equivalent to today's recommended tier, but there is no calculated tier score at the time of submission. Data from TFDW was also required to match existing TFRS data with individual performance data not previously archived for reenlistment requests.

The focus of this study was the Marine Corps' FTAP population for three years prior to the computer tier and the first three years using the computed tier to determine the effects on identifying and retaining quality. Prior Service Enlistment Program Marines and combat wounded reenlistment requests were excluded from the reenlistment sample. I also excluded observations that did not fall within each respective fiscal year's reenlistment window of July 1st, from the previous fiscal year, to 30 September of the reenlistment fiscal year. This exclusion included Marines with submission dates outside of the reenlistment window and EAS's outside of the reenlistment fiscal year. The totals in Table 1 are the number of individuals who applied for reenlistment and whose information is archived by MMEA-6. The totals in Table 2 show the usable number of observations for entire reenlistment cohorts from FY 2009 to 2011. I generated a modified tier scores for all observations using only PFT and proficiency and conduct marks. Using the modified tier scores, I was able to create cutoff score for tiers using the FTAP populations. These cutoff scores were applied to reenlistment pre-tier data to create computed submitted tiers for regression analysis.

Table 1.   Data Totals for each Fiscal Year

Fiscal Year	Observations
2009	7,217
2010	7,294
2011	7,163
2012*	Missing
2013	6,936
2014	5,109
Total	33,719
Average/Yr*	6,744

*Observations from 2012 are missing due to a system migration and were removed from the average/year calculation.

Table 2.   Data Used to Determine Tier Cutoffs Using Complete Reenlistment Cohorts (FY 2009-2011)[1]

Fiscal Year	Observations	Tier 1	Tier 2	Tier 3	Tier 4
2009	2,777	1,175	1,131	1,038	648
2010	20,283	1,175	1,130	1,042	503
2011	22,286	1,172	1,126	1,040	588

1.   Independent Variables

Primary variables of interest include a Marine's PFT score, CFT score, rifle score, MCMAP belt attainment, proficiency and conduct markings, RELM status, EAS date, RELM submission month, time between EAS and RELM submission date, submitted tier, and commander's recommended tier. Table 3 contains a list of all available independent variables with descriptions.

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[1] Many FY 2009 individual records had zeroes or missing values for PFT scores or proficiency and conduct marks and were subsequently omitted.

Table 3.   Variable Listing with Descriptions

Name	Definition
Approved	Approved for reenlistment by MMEA
Disapproved	Disapproved for reenlistment by MMEA
Reenlisted	Marine accepted reenlistment opportunity
Declined	Marine was approved for reenlistment but chose not to accept
PFT Score	PFT score (0-300)
CFT Score	CFT score (0-300)
Proficiency Mark	Proficiency score value (0-5.0)
Conduct Mark	Conduct score value (0-5.0)
Rifle Score	Rifle score (0-350)
MCMAP Belt Points	MCMAP belt level (0-95)
Misconduct	Misconduct exists in the RELM (NJP to courts-martial)
Modified Computed Tier	Rough tier calculation using PFT, proficiency/conduct marks (x100)
Time between EAS and Submission Date	Time constraint between a Marine's EAS and submission date
Submission Month	Month the RELM was submitted from the unit
Approval Month	Month the RELM was approved by MMEA
Computed Submitted Tier	Computed submitted tier (subtier)
Commander's Recommeded Tier	Commander's recommended tier (rectier); pre-tier recommendations converted to numeric values (1=enthusiastically recommended- 4= not recommended)

Tables 4 through 7 contain the summary statistics for each independent variable used in regression and cross-tabulation analysis. Summary statistics are grouped by fiscal year and computed tier usage.

Table 4.　Summary Statistics for FY 2013-2014, Part 1 of 2

Variable	Obs	Mean	Std. Dev.
Reenlistment Status			
Approved	12,045	0.911	0.285
Disapproved	12,045	0.089	0.285
Reenlist	12,045	0.822	0.383
Declined	12,045	0.089	0.285
Scoring Categories			
PFT Score	12,045	257.737	30.057
CFT Score	12,045	288.523	13.710
Proficiency Marks	12,045	4.432	0.113
Conduct Marks	12,045	4.425	0.117
Rifle Score	12,045	309.290	18.984
MCMAP Belt Points	12,045	18.852	13.911
Misconduct	12,045	0.095	0.293
Submission Month			
January	12,045	0.032	0.176
February	12,045	0.000	0.009
March	12,045	0.019	0.136
April	12,045	0.016	0.126
May	12,045	0.009	0.097
June	12,045	0.007	0.081
July	12,045	0.411	0.492
August	12,045	0.181	0.385
September	12,045	0.121	0.327
October	12,045	0.066	0.247
November	12,045	0.045	0.207
December	12,045	0.070	0.255

Table 5.   Summary Statistics for FY 2013-2014, Part 2 of 2

Variable	Obs	Mean	Std. Dev.
Days Submitted Before EAS			
Average Time	12,045	236.678	109.886
0-30 days	12,045	0.012	0.109
31-60 days	12,045	0.038	0.191
61-90 days	12,045	0.052	0.222
91-120 days	12,045	0.076	0.265
121-150 days	12,045	0.079	0.269
151-180 days	12,045	0.094	0.292
181-210 days	12,045	0.091	0.287
211-240 days	12,045	0.073	0.261
241-270 days	12,045	0.073	0.260
271-300 days	12,045	0.073	0.261
301-330 days	12,045	0.083	0.276
331-360 days	12,045	0.092	0.289
361-390 days	12,045	0.079	0.269
391-420 days	12,045	0.056	0.231
421-450 days	12,045	0.028	0.165
Quality Metrics			
Computed Submitted Tier	12,045	2.177	0.822
Commander's Recommended Tier	12,045	1.911	0.787
Modified Tier Score	12,045	1,143.448	41.559
Fiscal Years			
FY 2013	12,045	0.576	0.494
FY 2014	12,045	0.424	0.494

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Table 6.   Summary Statistics for FY 2009-2011, Part 1 of 2

Variable	Obs	Mean	Std. Dev.
Reenlistment Status			
Approved	21,674	0.949	0.219
Disapproved	21,674	0.051	0.219
Reenlist	21,674	0.863	0.344
Declined	21,674	0.086	0.281
Scoring Categories			
PFT Score	21,674	249.132	33.689
CFT Score	9,728	243.687	94.861
Proficiency Marks	21,674	4.436	0.136
Conduct Marks	21,674	4.429	0.158
Misconduct	21,674	0.151	0.358
Submission Month			
January	21,674	0.056	0.231
February	21,674	0.039	0.193
March	21,674	0.030	0.171
April	21,674	0.013	0.114
May	21,674	0.008	0.092
June	21,674	0.006	0.075
July	21,674	0.161	0.367
August	21,674	0.146	0.353
September	21,674	0.120	0.325
October	21,674	0.102	0.302
November	21,674	0.078	0.269
December	21,674	0.095	0.294

Table 7.   Summary Statistics for FY 2009-2011, part 2 of 2

Variable	Obs	Mean	Std. Dev.
Days Submitted Before EAS			
Average Time	21,674	222.657	112.526
0-30 days	21,674	0.029	0.168
31-60 days	21,674	0.058	0.234
61-90 days	21,674	0.063	0.242
91-120 days	21,674	0.077	0.267
121-150 days	21,674	0.076	0.264
151-180 days	21,674	0.080	0.271
181-210 days	21,674	0.082	0.275
211-240 days	21,674	0.084	0.277
241-270 days	21,674	0.083	0.276
271-300 days	21,674	0.078	0.268
301-330 days	21,674	0.081	0.272
331-360 days	21,674	0.080	0.272
361-390 days	21,674	0.061	0.239
391-420 days	21,674	0.046	0.208
421-450 days	21,674	0.023	0.150
Quality Metrics			
Computed Submitted Tier	21,674	2.128	0.702
Commander's Recommended Tier	21,674	1.313	0.546
Modified Tier Score	21,674	1,135.664	47.396
Fiscal Years			
FY 2009	21,674	0.333	0.471
FY 2010	21,674	0.337	0.473
FY 2011	21,674	0.330	0.470

2. Issues and Remedies

Some observations from FY 2009-2010 lack CFT data because the program was being introduced across the Marine Corps. According to MARADMIN 476/09, scoring began in July 2009, but mandatory testing for all Marines did not begin until calendar year 2010. In order to simulate the use of a computed tier score for pre-tier data, PFT, proficiency and conduct marks, and misconduct issues were used to estimate each applicant's score. Additionally, observations in fiscal years 2009 to 2011 from TFRS do not contain rifle scores, MCMAP belt scores, or data on meritorious promotions since there was no requirement to compute an objective tier. Matching data from TFRS with data archived in TFDW was not possible for either category due to time constraints and availability.

Marines who applied for reenlistment but were disapproved lack information regarding the MOS in which they applied for reenlistment. Analysis on the quality leaving a particular MOS, during certain time periods is possible, but any further analysis into a disapproved Marine's intended MOS, and possibly a lateral move, is not feasible.

B. TECHNIQUES APPLIED

1. Correlation Matrices

I analyze trends in performance metrics and determine the relationship between these metrics in the computed tier using a correlation matrix. The relationships are significant for this analysis since pre-tier reenlistment requests submitted in TFRS did not archive rifle and MCMAP performance metrics. Matching data from TFDW with the pre-tier records to replicate the computed tier was attempted but was not successful due to time constraints. A product of the correlation matrices was the validation of certain performance metrics as adequate components for a modified submitted tier. I did obtain data on the entire FY 2009 to 2011 reenlistment cohorts to create modified tier cutoffs using PFT scores and proficiency and conduct marks. The modified submitted tier does

account for the effects of conduct issues in a Marine's record, but not their standing within their MOS.

2. Tier Replication and Difference in Difference Analysis

To provide initial comparisons between measures of quality used by each reenlistment system, the tier evaluation formula was applied to pre-tier data to measure the quality of individuals approved. I also constructed a difference in difference matrix to highlight differences between the pre-tier evaluations and computed tier evaluations. The aim is to compare acceptance rates for reenlistment based on the submitted evaluation and the frequency distributions of quality as defined during their respective periods.

3. Regression Analysis

A more comprehensive analysis using linear regression evaluates the relationship between an individual's EAS versus their reenlistment processing time and the effects on quality retained by the force. By incorporating EAS dates, submission months, scored tier, fiscal year, and interactions between timelines, the effects of quality in relation to submission will be determined. Demographics and the effects on specific MOS communities were not addressed in this initial assessment of aggregate quality.

IV. ANALYSIS

A. DATA TRENDS

TFRS provided the primary sets of data used for analysis, and although many of the fields were the same for pre-tier data and computed tier data, the standard used to rate a Marine's overall quality changed. Pre-tier data relied solely on the commander's subjective evaluation. Computed tier data combines the commander's subjective evaluation with an objective score from the tier calculation. Additionally, data archived under the pre-tier system did not record an individual's MCMAP, rifle scores, or meritorious promotion history.

The trends in performance metrics that are used to determine a reenlisting Marine's tier are presented in figures 5 through 11 and Table 10 compare Marines approved for reenlistment under the pre-tier and computed tier reenlistment processes. Corresponding graphs for MCMAP belts and rifle scores are not provided for FY 2009 to 2011 due to gaps in the provided data. The limited number of CFT scores from FY 2010 and FY 2011 are provided for comparison against computed tier data. I focused on the trends in categories that were ultimately incorporated into the modified submitted tier: PFT, proficiency marks, and conduct marks.

Figure 5 shows the upward trend in PFT and CFT scores. The average PFT score for Marines who were approved for reenlistment rose from 249 to 258. Likewise, the average CFT rose from 244 to 289. The higher increase in CFTs is attributed to the implementation and maturation of the test. Additionally, the higher average for CFT scores is also expected since the cutoff for a first-class score is higher than its PFT counterpart.
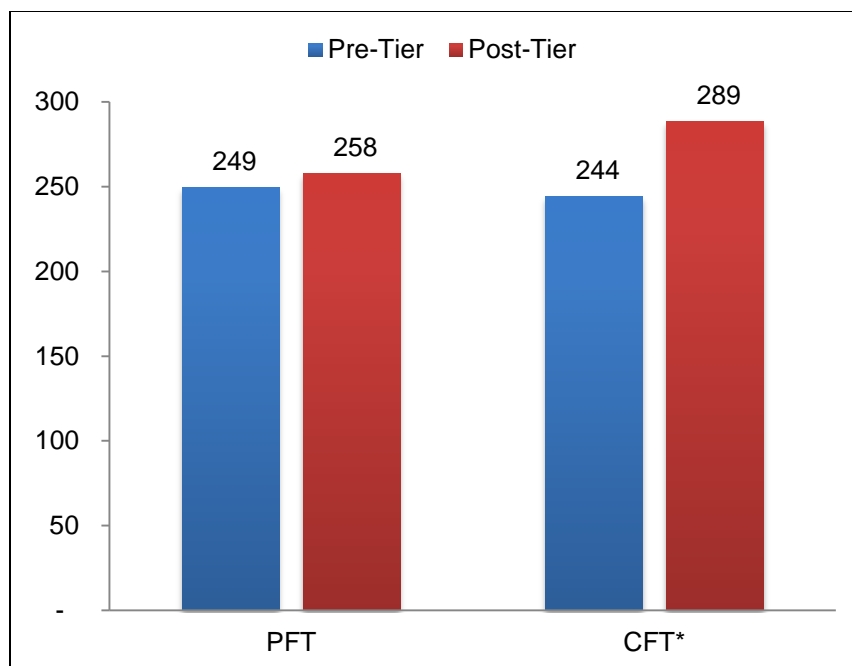
Figure 5. Trends in PFT and CFT Scores for Approved Marines between Pre-Tier and Computed Tier Data [2]

In Figure 6, proficiency and conduct marks between pre-tier and computed tier data show very little variation in scores. The lack of variation is not surprising given that the average Marine recruit, in accordance with the IRAM, has proficiency and conduct marks of 4.2 and 4.2, on a 0 to 5.0 scale (USMC, 2000). The averages for Marines approved for reenlistment during both periods are above average by definition.

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[2] Limited CFT data existed for pre-tier observations. The average presented is a representation of partial data from FY 2010 and 2011.
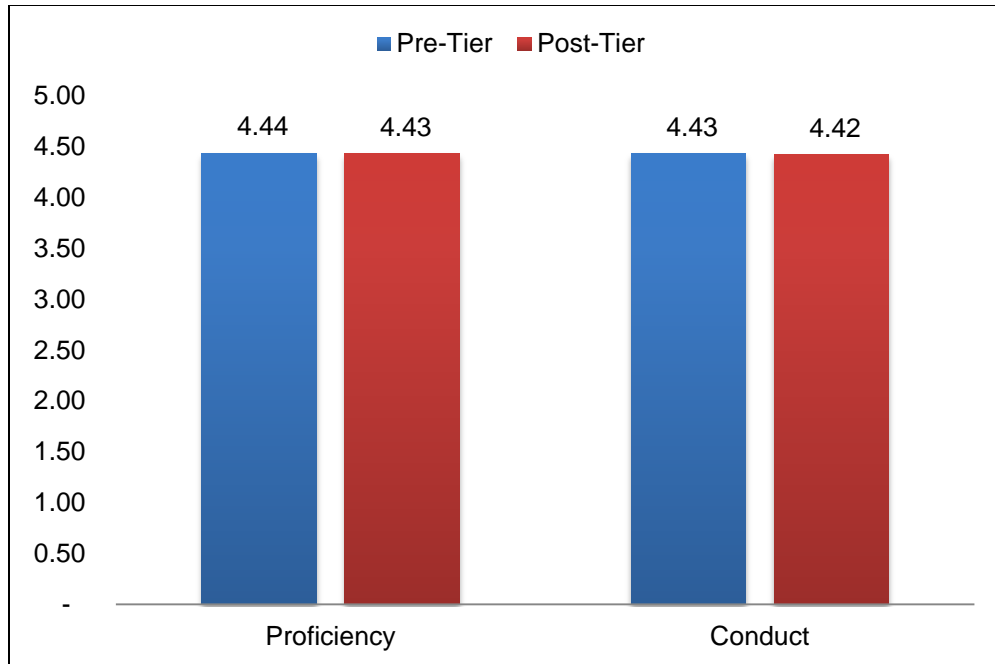
Figure 6.   Trends in Proficiency and Conduct Marks for Approved Marines
between Pre-Tier and Computed Tier Data

B.   CORRELATION MATRICES

The correlation matrix seen in Table 8, for computed tier data, found that PFT and proficiency and conduct markings were more correlated with higher tiers and presumably higher quality. The performance data from PFT scores may be more reliable since the test as a metric has been used for decades and, in contrast, the CFT is only several years old.

Table 8.   Correlation Matrix for 2013-2014 Reenlistment Data[3]

	Sub. Tier	PFT	CFT	Pros	Cons	Rifle	MCMAP
Computed Submitted Tier	1.000						
PFT Score	-0.598	1.000					
CFT Score	-0.408	0.382	1.000				
Proficiency Marks	-0.528	0.260	0.204	1.000			
Conduct Marks	-0.514	0.224	0.181	0.860	1.000		
Rifle Score	-0.248	0.069	0.072	0.106	0.091	1.000	
MCMAP Belt Points	-0.313	0.203	0.165	0.192	0.184	0.072	1.000

The high correlation of proficiency and conduct marks is not surprising given that a commander must rely upon the recommendations of his or her subordinate leaders but the record of the individual as it stands during a request to reenlist. Additionally, proficiency and conduct values are multiplied by 100 before addition into the computed tier score. Average Marine recruit markings in accordance with the IRAM are 4.2 in proficiency and 4.2 in conduct (4-39, 4-42). Once these values are increased by a factor of 100, their total value naturally makes up a larger proportion of the computed tier score. PFT and CFT cannot exceed 300 points for each test.

Surprisingly, a Marine's rifle score, which can range from 0 to 345, was less correlated with a computed tier score than the MCMAP belt and seems counterintuitive to the phrase, "Every Marine a Rifleman." The point system for MCMAP belt attainment ranges from 5 to 95 points. The MCMAP belt point average is 18 points and stands between the green and brown belts. In comparison to rough computed tier scores, 18 points is less than one percent of a Marine's overall evaluation. The differences in correlation strength may indicate the significance of marksmanship based on MOS. Marines certify annually for marksmanship. Proficiency in marksmanship is limited based on time and

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[3] Note that the highest computed submitted tier value is "1," and therefore, the correlation values for all of the characteristics are negative. In this case, a lower computed tier indicates better quality.

resources allocated to each unit; whereas, a Marine can generally seek self-improvement for MCMAP or the PFT/CFT on a daily basis rather than only at an annual training evolution.

If anything, the MCMAP belt may be appropriate for inclusion as an indicator for motivation or persistence, but not as a measure of proficiency in grade or MOS. The presence of meritorious promotion in the computed tier, in theory, provides the same indicator for continued service as opposed to just successful completion. A limitation of this study is that the meritorious promotion data was not available for analysis.

Breaking down each of the components within the tier and from TFDW data merged with TFRS allows the comparison of individual tiers components and a descriptive analysis of certain qualities over time. The overall increase in each category's scores may be a reflection of external influences, say the poor economy, rather than an improvement in reenlistment procedures or stakeholder buy-in.

Another metric of quality is the number of misconduct issues that are present in reenlistment packages. The summary statistics in Tables 4 through 7 show that the misconduct count in submissions has decreased from 15.1% to 9.5%. Stakeholders from unit leaders to monitors at MMEA-8 and the decision authority at MMEA-6 weigh-in on the importance of retaining an individual with conduct in their record. Not only does the computed tier account for significant conduct issue like NJPs or courts-martial, but then the RELMs with conduct are routed differently from their counterparts.

C.   TIER REPLICATION

Comparing the data from both reenlistment processes can be completed in multiple ways. The commander's recommendation and the commander's recommended tier can be viewed as equivalent measures. Comparing the acceptance rates of Marines based on purely subjective recommendations shows how much weight was given to a commander's comments. From this

analysis, a commander's recommendation has significant weight in determining a Marine's eligibility to reenlist. The benefit of the computed tier is that the ranking and eligibility of the Marine is placed in context through a comparison against their peers within their MOS who will continue to compete with them for future career opportunities, if accepted.

After determining factors that weigh heavily into the determination of a Marine's computed tier score, I replicate the computed tier on pre-tier data. Fortunately, data on PFTs and proficiency and conduct marks were available for FY 2009 to 2011 reenlistment data. Using full reenlist cohort data from TFDW containing PFT and proficiency and conduct marks for all eligible FTAP Marines, I was able to construct a modified computed tier. Observations lacking scores in the three areas were not used to generate the modified tier. The cutoff scores were generated by multiplying the total number of observations for each year by the proportions established for each tier. For example, tier 1 scores include only the top 10% of the reenlistment population, the next 30% are tier 2 Marines, and so on. The modified tier cutoff scores, as shown again in Table 9, for FY 2009 to 2011 were similar. These scores are the product of category averages. Once applied to existing reenlistment data, the penalties on conduct, or jeopardy, were also factored into the modified "computed submitted tier." Again, the modified submitted tier score is not specific to each MOS and provides an average tier score. Table 9 provides the cutoff scores for each year.

Table 9.   FY 2009-2011 Generated Cutoff Tier Scores

Fiscal Year	Observations	Tier 1	Tier 2	Tier 3	Tier 4
2009	2,777	1,175	1,131	1,038	648
2010	20,283	1,175	1,130	1,042	503
2011	22,286	1,172	1,126	1,040	588

The distribution of commander's recommendations, from FY 2009-2011 in Figure 7, shows that 73% of approved reenlistment requests were recommended with enthusiasm when submitted to MMEA. The recommended with confidence category followed with 24% of observations and before the modified computed tier is applied, the recommendation distribution is skewed.

In Figure 8, I compare the distribution of modified computed tiers, as applied to FY 2009-2011 pre-tier data, to computed tier data from FY 2011-2013. The proportion of Marines approved for reenlistment changes significantly. Under the pre-tier process, 18% of approvals are ranked in the first tier and followed by 52% in the second tier. The observations have a more central tendency following the application of a modified computed tier.
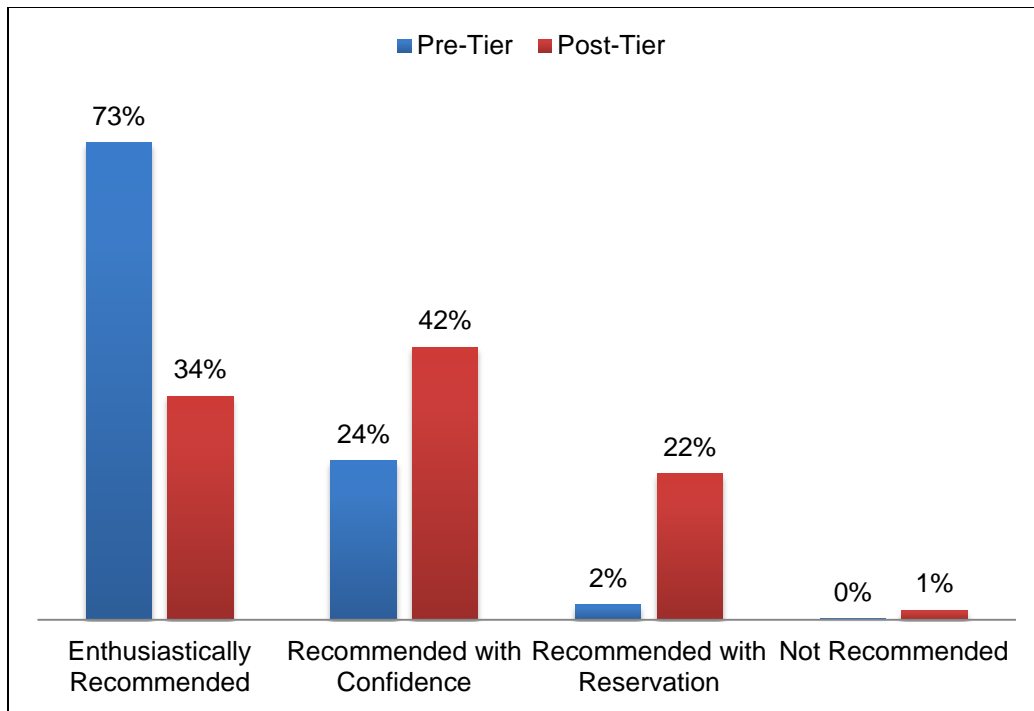
Figure 7.   Commander's Recommended Tiers for Approved Reenlistment Requests
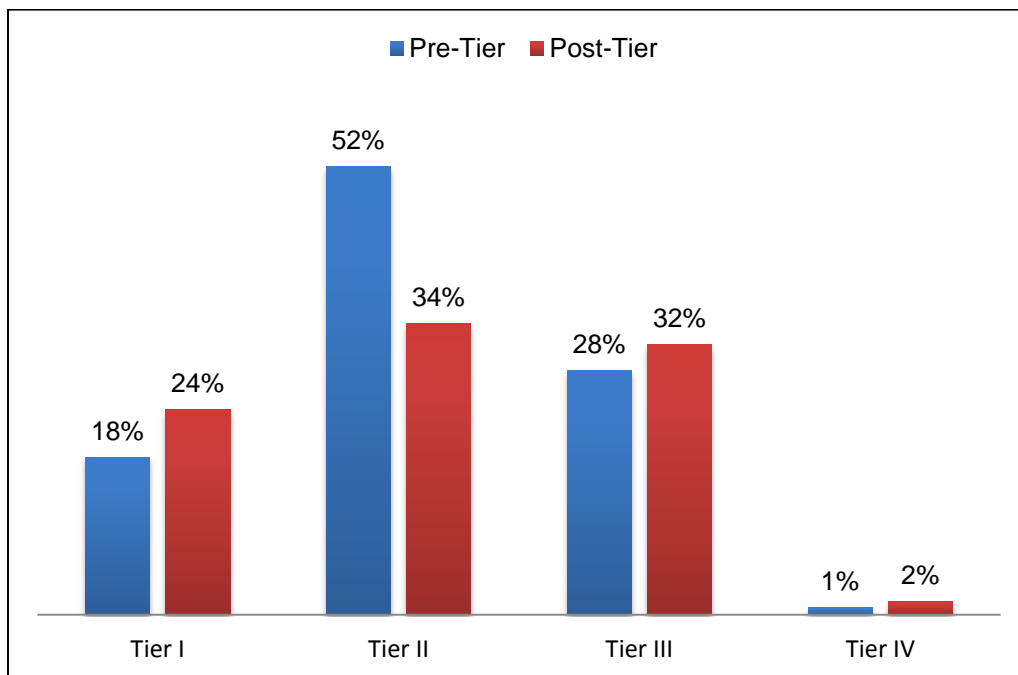
Figure 8.   Modified Computed Tiers and Computed Submitted Tiers for Approved Reenlistment Requests

Looking at the percent approved of submitted by tier in Figure 9, the pre-tier approval percentage for each category did not fall below 92%. With the application of the computed submitted tier the percent approve does decrease as the respective level of quality decreases. The range of percent approved, from lowest to highest quality, is now from 69% to 99% instead of 92% to 96%. The small variation in approval percentages for pre-tier data suggests that limited differentiation occurred between reenlistment requests. Even with the computed tier, 69% of tier 4 Marines, who are in the bottom 10%, are still approved for reenlistment.
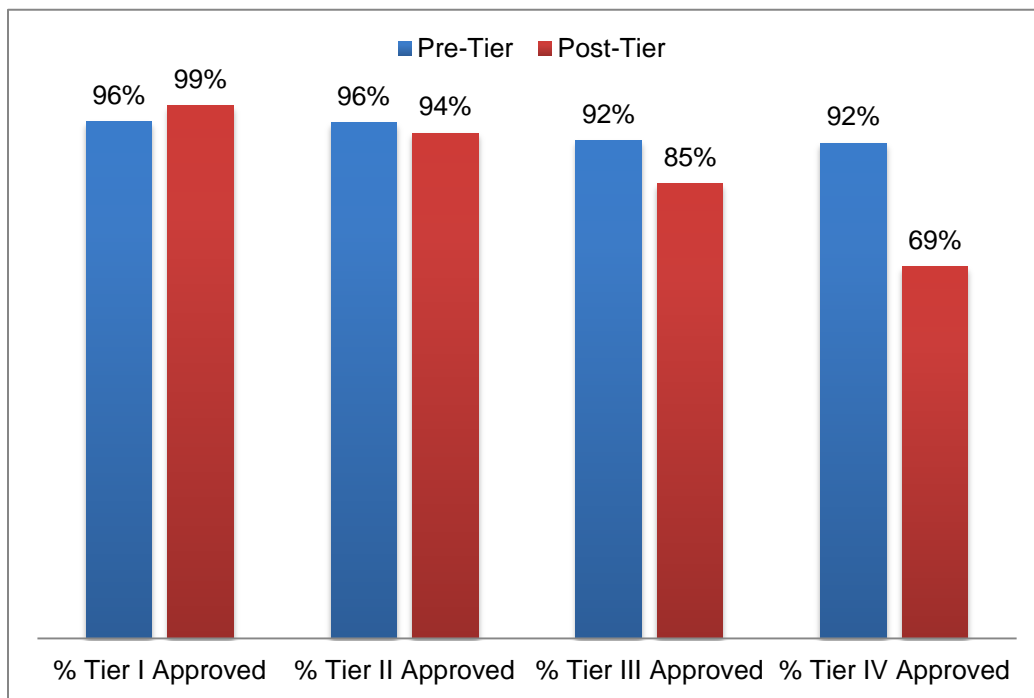
Figure 9.   Percent Approved of Submitted, by Tier

The modified computed tier is compared against commander's recommended tier in Figure 10. Numeric values were assigned to the commander's recommendation for pre-tier data, with "enthusiastically recommended" indicated as tier 1. An overwhelming number of Marines are enthusiastically recommended within every modified computed tier category. This reflects a tendency of commanders to artificially inflate their Marines'

performance when providing a subjective recommendation. In this instance, in order to obtain an objective perspective on the Marine reenlisting, the commander would have to gather performance metrics on the individual as well their peers. The addition of the submitted computed tier provides an objective anchor for commander's to make better informed recommendations.
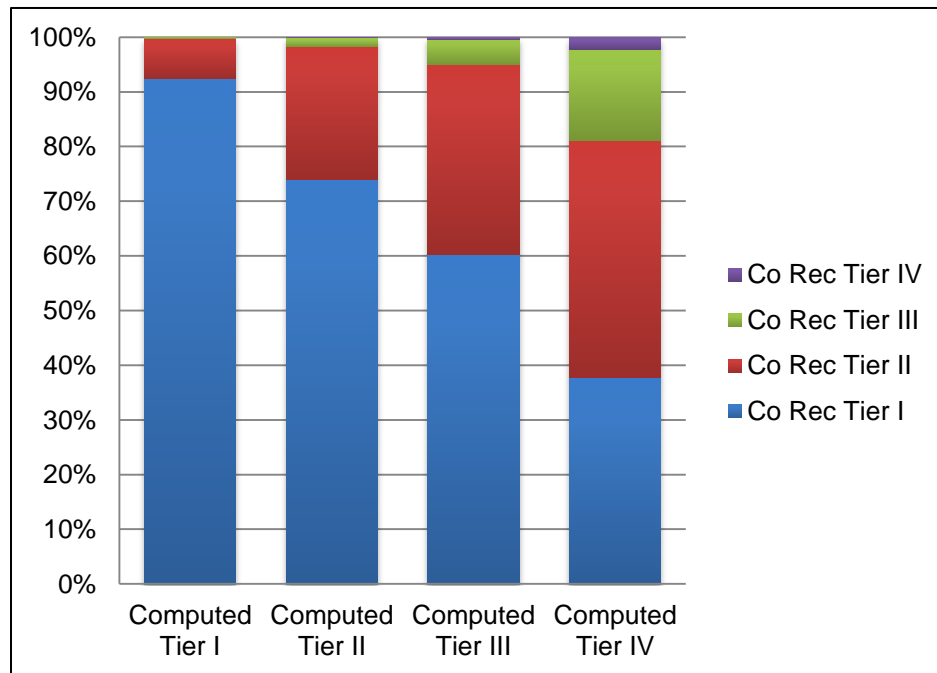
Figure 10.   Modified Computed Tier vs. Commander's Recommended Tier for Approved Reenlistments FY 2009-2011

Figure 11 illustrates the results of providing this objective assessment to commanders during the reenlistment process. In Figure 11, if a Marine's computed tier was calculated to be a certain value, a commander is more likely to recommend an elevation of tier quality, or concur with the calculated tier, rather than suggest a downgrade in tier. This reflects what is seen in Figure 10 with pre-tier data where commanders are continuing to inflate their Marine's performance; however, this tendency has been tempered by the availability of the objective computed tier. For example, in the entire computed tier population, the proportions that commander's recommended for downgrade never exceeded 10

percent. Of the Marines who were computed as tier 3, commanders recommended that over 45 percent of those individuals be elevated to tier 1 or tier 2. The biggest disparity between commander's rankings and the computation is within the tier 4 category. Over 70 percent of commanders' recommendations were for increases to higher tier levels. Given the tendency to inflate a Marine's quality rating, in cases where a commander decides to decrease a Marine's tier, more validity should be given to the subjective recommendation during the decision making process.
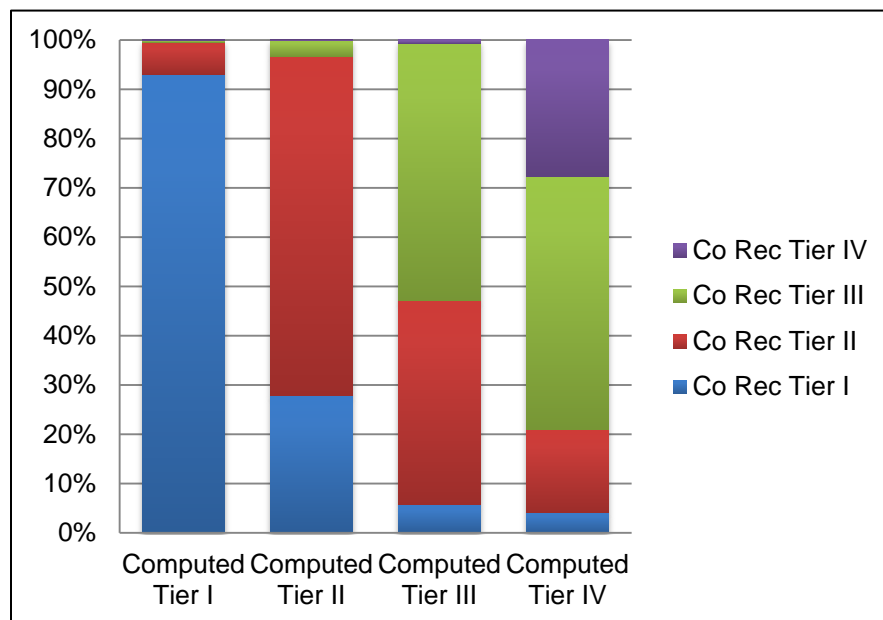
Figure 11.   Submitted Computed Tier vs. Commander's Recommended Tier for Approved Reenlistments FY 2013-2014

After considering the trends in performance indicators and applying a modified computed tier to the pre-tier data, I now have three measures of quality that I will further analyze using linear regression analysis. To capture the initial effects of the computed tier, I construct Table 10 to highlight the differences in quality by category and established metrics. Although the computed tier and commander's recommendations reflect a decrease in quality or a marginal increase, the modified tier score is consistent with the trends previously explored

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in the data. PFT and CFT scores are large portions of the computed tier and have noticeable increases between the two reenlistment periods. Proficiency and conduct marks have hovered around the same values. The large, negative percent change in commander's recommended tiers is related to the inflation of scores as discussed earlier.

Table 10.   Difference in Difference Matrix

		Pre-Tier	Post-Tier	% Increase in Quality
Submitted	*Computed Tier*	2.13	2.18	-2.3%
	Cmdr's Rec Tier	1.31	1.91	-45.6%
	Modified Tier Score	1136	1143	0.7%
Approved	*Computed Tier*	2.12	2.12	0.0%
	Cmdr's Rec Tier	1.30	1.85	-42.8%
	Modified Tier Score	1136	1146	0.9%
Reenlisted	*Computed Tier*	2.12	2.12	0.3%
	Cmdr's Rec Tier	1.29	1.85	-42.7%
	Modified Tier Score	1136	1146	0.9%

D.   REGRESSION ANALYSIS

In an effort to answer the primary and secondary questions regarding reenlistment processing times and how a Marine's EAS affects the retention of high quality Marines, the following regressions listed below used the computed submitted tier, commander's recommended tier, and modified tier score as measures of quality and the dependent variable. For the purposes of the regression analysis, the computed submitted tier refers to the modified computed tier for pre-tier data and the actual computed tier for FY 2013-2014 data. The third equation refers to the score generated from PFT scores and proficiency and conduct marks applied to both reenlistment periods.

1) $Q_{Tier} = \beta_o + \beta_1 \text{Reenlistment Status} + \beta_2 \text{Time Constraint*Reenlistment Status} + \beta_3 \text{Submission Month (or Approval Month)*Reenlistment Status} + u$

2) Q_{Co} Rec = β_o + β_1Reenlistment Status + β_2Time Constraint*Reenlistment Status + β3Submission Month (or Approval Month)*Reenlistment Status + u

3) $Q_{ModTier}$ = β_o + β_1Reenlistment Status + β_2Time Constraint*Reenlistment Status + β_3Submission Month (or Approval Month)*Reenlistment Status + u

The outcome of these regressions is an aggregate measure of quality for Marines who are approved for reenlistment during a particular month. What is also factored into these models is a time constraint variable that accounts for a Marine's EAS in relation to the RELM submission date. Interacting these terms with a Marine's reenlistment status determines the overall quality retained based on when the RELM was submitted and within what time period. I focus on Marines approved for reenlistment in the regression analysis to isolate quality that the Marine Corps approved for reenlistment.

The time constraints evaluated range from 30 days to 450 days prior to a Marine's EAS and are grouped in independent 30-day intervals. The time constraint interacted with the reenlistment status explains how quality is affected when a Marine submits for reenlistment during that period. Additionally, each month was interacted with the reenlistment status to show the effects of reenlistment windows on retention quality. The expected heavy reenlistment periods are July, August, and September of each year. The reenlistment window for each upcoming fiscal year opens 1 July the previous fiscal year. The window for lateral moves that are not into high demand/low density MOS's begins 1 December of each year (MMEA, 2013).

I estimated the effect of interactions and reenlistment statuses on three measures of quality: computed submitted tiers, recommended tiers, and modified tier scores. The computed submitted tiers for pre-tier data were generated from PFT scores and proficiency and conduct data from FTAP data provided by TFDW. The modified tier score provides a metric for quality in the FTAP cohort but does not differentiate between quality in MOSs. The modified tier score for pre-tier and computed tier data is helpful to compare raw quality between reenlistment years using different processes and metrics. The subjective

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measure of quality, the commander's recommendation, is also an important measure of quality used by both reenlistment processes and a gauge of changing quality throughout a reenlistment period.

In order to determine the effect of submission window and submission month on the quality of reenlisting Marines, I developed a linear regression model for both pre-tier and computed tier time periods. The independent variables used in the linear regression consisted of submission window and submission month. The submission window is defined as the time between the formal submission date of the RELM to MMEA and the requesting Marine's EAS. The reference group for submission window is any package submitted in excess of 420 days prior to a Marine's EAS. The submission month is defined as the month in which the RELM was submitted to MMEA for processing. July, which is the start of the reenlistment period, is utilized as the reference month. These terms were interacted with a Marine's approved status to determine the quality of Marines approved by submission window and month. The approved status is included as an independent variable to assess the overall quality of Marines approved, utilizing those who were disapproved as the reference group. I also control for fiscal year, utilizing 2009 as the pre-tier reference year and 2013 as the computed tier period reference year.

1.   Pre-Tier Model

Three measures of quality were selected as the dependent variables for the linear regression model. The three measures of quality, defined as follows for the pre-tier model, are computed submitted tier, commander's recommended tier, and modified tier score. The computed submitted tier is defined as a modified version of the existing computed tier using PFT, proficiency, and conduct markings from the eligible enlisted population. The commander's recommended tier is defined as the commander's subjective recommendation represented numerically with 1 being the highest numerical value for those enthusiastically recommended and 4 being the lowest. The modified tier score is defined as the

cumulative value of a Marine's PFT, proficiency score, and conduct score. In Table 11, variables having a positive effect on quality in the computed submitted tier and commander's recommended tier contribute to a lower score. As for the modified tier score, variables that have a positive effect on quality contribute to a higher score.

Table 11 shows the results of the pre-tier linear regression model for all three measures of quality. The coefficients show the change in average quality measure of those Marines approved compared to the reference group, greater than 420 days for submission window and July for submission month. As expected, the average approved quality increased for all three measures of quality in reference to those who were disapproved. The average measured quality for those Marines approved is 2.17 for computed submitted tier, 1.12 for commander's recommended tier, and 1,141.72 for modified tier score. Looking at the fiscal years, average quality declines in 2010, but increases significantly in 2011 compared to 2009.

In Table 11, the model showed one submission window that is statistically significant ($p < 0.05$) for all three measures of quality. A submission window of less than 30 days prior to a Marine's EAS is associated with 0.12 (5%) lower computed submitted tier quality, 0.15 (13%) lower quality in commander's recommended tier quality, and 6.69 (0.5%) lower quality in modified tier score quality compared to those who submit earlier than 420 days from their EAS. The only other statistically significant submission windows are seen in reference to the commander's recommended tier and show a trend of decreasing quality from a 91-120 day submission window through the 0-30 day submission window. Although the 181-210 submission window is also significant at the 1% significance level, there is no identifiable trend for later submission windows.

With regard to the submission month, Table 11 reveals that every month, except June, has associated lower quality, at the 5% significance level on the value of all three quality measures. From the start of the reenlistment period, each month shows a reduction in quality relative to average approved quality of

those submitting in July. The computed submitted tier results show June, July, and August have the highest quality throughout the reenlistment period, with 3% lower quality in August for computed submitted tier quality compared to July. September through April have 4%-5% lower quality in computed submitted tier quality compared to those who submit in July. The biggest decline in quality is seen in the month of May with a 9% lower associated quality in computed submitted score relative to July submissions.

For the commander's recommended tier, there is a statistically significant ($p<0.01$) decline in quality which trends down from August to May. The commander's recommended tier shows 5% lower quality in August and trends down to 15% lower quality in May compared to July submissions, showing that commander's recommendation decreases over the course of the reenlistment period. For the modified tier score, each submission month was statistically significant ($p<0.05$); however, the quality measure is never lower by more than 1% compared to July submissions and there is no readily distinguishable trend.

Table 11.   Regression Results for Pre-Tier Approved Data

Variables	Computed Submitted Tier		Commander's Recommended Tier		Modified Tier Score	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Approved	-0.213***	(0.036)	-0.487***	(0.029)	14.121***	(2.558)
Submission Window (>420 days is the reference category)						
0-30 days	0.119***	(0.042)	0.152***	(0.034)	-6.688**	(2.986)
31-60 days	-0.001	(0.037)	0.100***	(0.030)	-0.732	(2.637)
61-90 days	-0.002	(0.037)	0.078***	(0.029)	-1.399	(2.577)
91-120 days	-0.023	(0.035)	0.068**	(0.028)	3.211	(2.472)
121-150 days	-0.052	(0.035)	0.045	(0.028)	3.441	(2.480)
151-180 days	-0.037	(0.035)	0.052*	(0.028)	3.390	(2.469)
181-210 days	0.003	(0.035)	0.073***	(0.028)	0.917	(2.459)
211-240 days	-0.001	(0.035)	0.055**	(0.028)	1.323	(2.458)
241-270 days	-0.008	(0.035)	0.030	(0.028)	0.295	(2.467)
271-300 days	-0.037	(0.035)	0.041	(0.028)	3.357	(2.480)
301-330 days	-0.006	(0.035)	0.070**	(0.028)	1.241	(2.444)
331-360 days	-0.001	(0.034)	0.049*	(0.028)	-0.389	(2.429)
361-390 days	-0.004	(0.036)	0.050*	(0.029)	-0.313	(2.510)
391-420 days	0.039	(0.037)	0.073**	(0.030)	-3.425	(2.599)
Submission Month (July is the reference category)						
August	0.077***	(0.015)	0.058***	(0.012)	-5.974***	(1.062)
September	0.114***	(0.017)	0.052***	(0.013)	-8.416***	(1.179)
October	0.093***	(0.018)	0.067***	(0.014)	-7.726***	(1.269)
November	0.129***	(0.020)	0.105***	(0.016)	-10.308***	(1.405)
December	0.105***	(0.019)	0.087***	(0.015)	-8.406***	(1.316)
January	0.115***	(0.023)	0.085***	(0.018)	-9.749***	(1.605)
February	0.151***	(0.026)	0.135***	(0.021)	-12.153***	(1.863)
March	0.097***	(0.030)	0.141***	(0.024)	-10.775***	(2.118)
April	0.094**	(0.044)	0.117***	(0.036)	-7.647**	(3.130)
May	0.211***	(0.053)	0.166***	(0.043)	-11.735***	(3.762)
June	-0.072	(0.064)	0.094*	(0.051)	-1.621	(4.498)
Fiscal Year (FY 2009 is the reference category)						
FY 2010	0.043***	(0.011)	0.055***	(0.009)	-1.652**	(0.810)
FY 2011	-0.378***	(0.012)	0.125***	(0.009)	-0.348	(0.831)
Constant	2.380***	(0.021)	1.606***	(0.017)	1,127.602***	(1.463)
Observations	21,674		21,674		21,674	
R-squared	0.091		0.034		0.011	

***p<0.01, **p<0.05, *p<0.1

2.   Computed Tier Model

Three measures of quality were used again as the dependent variables for the linear regression model with computed tier data from FY 2013-2014. The three measures of quality, defined as follows for the computed tier model, are computed submitted tier, commander's recommended tier, and modified tier

score. The computed submitted tier is defined as a modified version of the existing computed tier using PFT, proficiency, and conduct markings from the eligible enlisted population. The commander's recommended tier is defined as the commander's subjective recommendation represented numerically with 1 being the highest numerical value for those enthusiastically recommended and 4 being the lowest. The modified tier score is defined as the cumulative value of a Marine's PFT, proficiency score, and conduct score. In Table 12, variables having a positive effect on quality in the computed submitted tier and commander's recommended tier contribute to a lower score. As for the modified tier score, variables that have a positive effect on quality contribute to a higher score.

Table 12 shows the results of the computed tier linear regression model for all three measures of quality. The coefficients show the change in average quality measure of those Marines approved compared to the reference group, greater than 420 days for submission window and July for submission month. February is omitted from the regression due to a lack in observations. Again, the average approved quality increased for all three measures of quality in reference to those who were disapproved. The average measured quality for those Marines approved is 2.11 for computed submitted tier, 1.74 for commander's recommended tier, and 1,147.63 for modified tier score. Looking at the fiscal years, average quality improves in 2014 relative to FY 2013.

In Table 12, the model showed two submission windows that were marginally statistically significant ($p<0.10$) for the modified tier score at 0-30 days and the computed submitted tier at 61-90 days. Both values signify improvements to quality relative to those who submit earlier than 420 days. A statistically significant value and improvement to quality ($p<0.05$) is seen at the 151-180 mark for the computed submitted tier. No discernable reason for improvement for this point in time is distinguishable. Values for all other time periods and quality measures were insignificant.

Now taking into consideration submission month, Table 12 reveals that every month, except June, has a statistically significant ($p<0.05$) impact on the value of all three quality measures. Like the pre-tier data, from the start of the reenlistment period, each month shows a reduction in quality relative to average approved quality of those submitting in July. Again, the computed submitted tier results show June, July, and August have the highest quality throughout the reenlistment period, with August associated with 2% lower quality in computed submitted tier compared to July. The computed tier data does display a periodic trend for the computed submitted tier measure of quality. From August to October, quality is 2% to 7% lower relative to those who submit in July. Likewise from November to January, quality is 4% to 11.5% lower relative to those who submit in July. The last iteration is from March to May. Compared to July submissions, quality for those approved declines by 5% to 11.5%.

For the commander's recommended tier, statistically significant values ($p<0.01$) are present for all values from August to May. In line with the computed submitted tier measure of quality, the commander's recommended tier displays a periodic decline in quality for the same month groups. August to November recommended quality is 6% to 12% lower than compared to July submissions. November to January, reflect 9% to 17% lower quality relative to those who submit in July and lastly, March through May reflect 10% to 19% lower quality in comparison to July. For the modified tier score, each submission month was statistically significant ($p<0.05$); however, the quality measure never decreases by more than 0.9% relative to July submissions. A similar declining period trend is seen for the modified tier score with percent changes ranging from 0.3% to 0.9% in comparison to July submissions.

Table 12.   Regression Results for Computed Tier Approved Data

Variables	Computed Submitted Tier		Commander's Recommended Tier		Modified Tier Score	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Approved	-0.697***	(0.051)	-0.831***	(0.049)	32.811***	(2.611)
Submission Window (>420 days is the reference category)						
0-30 days	-0.095	(0.088)	0.046	(0.083)	-7.637*	(4.465)
31-60 days	0.009	(0.063)	0.060	(0.059)	-5.001	(3.185)
61-90 days	-0.111*	(0.058)	-0.037	(0.055)	0.159	(2.966)
91-120 days	-0.030	(0.054)	0.043	(0.051)	-3.004	(2.738)
121-150 days	-0.042	(0.054)	0.022	(0.051)	-1.643	(2.729)
151-180 days	-0.108**	(0.052)	-0.035	(0.050)	0.723	(2.662)
181-210 days	-0.029	(0.052)	0.035	(0.050)	-0.348	(2.660)
211-240 days	-0.086	(0.054)	0.005	(0.051)	0.733	(2.752)
241-270 days	-0.001	(0.055)	0.015	(0.052)	-0.972	(2.771)
271-300 days	0.008	(0.055)	0.046	(0.052)	0.362	(2.783)
301-330 days	-0.011	(0.053)	0.051	(0.051)	-0.927	(2.709)
331-360 days	0.001	(0.052)	0.069	(0.050)	-0.519	(2.661)
361-390 days	-0.057	(0.053)	0.016	(0.050)	2.193	(2.704)
391-420 days	-0.030	(0.056)	0.007	(0.053)	3.886	(2.828)
Submission Month (July is the reference category)						
August	0.060***	(0.022)	0.115***	(0.021)	-3.519***	(1.099)
September	0.111***	(0.026)	0.190***	(0.025)	-6.084***	(1.315)
October	0.149***	(0.033)	0.214***	(0.031)	-8.785***	(1.655)
November	0.087**	(0.039)	0.170***	(0.037)	-8.572***	(1.973)
December	0.141***	(0.032)	0.199***	(0.031)	-9.766***	(1.637)
January	0.245***	(0.045)	0.303***	(0.043)	-11.365***	(2.281)
March	0.122**	(0.058)	0.190***	(0.055)	-8.609***	(2.958)
April	0.224***	(0.065)	0.284***	(0.061)	-12.149***	(3.292)
May	0.245***	(0.087)	0.342***	(0.083)	-10.873**	(4.421)
June	0.050	(0.114)	0.191*	(0.108)	-1.427	(5.804)
Fiscal Year (FY 2013 is the reference category)						
FY 2014	-0.054***	(0.015)	-0.052***	(0.014)	5.896***	(0.769)
Constant	2.811***	(0.026)	2.578***	(0.024)	1,114.826***	(1.306)
Observations	12,045		12,045		12,045	
R-squared	0.063		0.082		0.056	

***p<0.01, **p<0.05, *p<0.1

3.   Pre-Tier and Computed Tier Model Comparison

In comparing the pre-tier model and computed tier model, the following significant results can be stated regarding the impact of the submission window, or the significance of a Marine's EAS on RELM processing. One of the notable submission windows from the pre-tier data was from 0-30 days before a Marine's EAS and its negative effect on quality. In the computed tier data, this effect does

not appear. In fact, quality improves at the 1% significance level in the modified tier score measure of quality. A progressive decline in quality, in the commander's recommended tier category, was seen from 91-120 days to the closest window only in pre-tier data. All other outputs for the computed tier data either lacked significance or displayed no discernable trend.

To address the question regarding quality over the fiscal year, every submission month, excluding June, in both regression models and, excluding February in the computed tier model, were highly statistically significant. Both models are consistent with quality declining as the reenlistment period progresses. The negative trend, measured in percentages, was more gradual for the pre-tier model but periodic for the computed tier model. Currently, the trends in declining quality can be partially explained relative to the start of the reenlistment window (July) and in relation to the start of the lateral move period in December. The least periodic of all three quality measures was the modified tier score; however, this metric also showed a consistent decline over the reenlistment period.

E.   ANALYSIS OVERVIEW

Some insight into stakeholder involvement, but not incentives, is seen through the graphical analysis. The addition of the computed tier provides an objective anchor for commanders' recommendations. There is no evidence of incentive and objective mismatch. On EAS's, there is some evidence that the 0-30 day submission window for pre-tier Marines is associated with lower quality, but this does not appear in computed tier data. Changes over the reenlistment period are evident in both sets of data. Relative to July, at the start of the reenlistment period, higher quality is retained at the start and later months are associated with lower quality. The change in pre-tier data is more gradual, but the computed tier data presented a periodic declining trend. Lastly, with limited data on complete reenlistment cohorts, the assessment of overall quality changing since the introduction of the computed tier cannot be determined. The

difference in difference matrix suggests that there was no significant change overall with the given data and limitations on generating comparable tiers for pre-tier data.

V.   SUMMARY, CONCLUSION, AND RECOMMENDATIONS

A.   DISCUSSION

My research sought to answer the primary question of how quality changes over the course of the reenlistment period for first-term Marines in relation to stakeholders and under the recently implemented tier system. In support of this primary question, I posed the following secondary questions:

- Where are incentives and objectives mismatched at each level of processing for stakeholders?
- How does a Marine's expiration of active service (EAS) impact the processing of their reenlistment request?
- Does quality change over the course of the fiscal year to include the reenlistment periods and lateral move periods?
- How has the quality of the enlisted force selected for reenlistment changed since the introduction of the tier evaluation system?

I address each question based on the results from my literature review in Chapter II and my analysis in Chapter IV.

On the question of mismatched objectives and incentives, I map the role of stakeholders in the reenlistment process from RELM initiation to decision. Following a critical review of each stakeholder's role in the RELM process, there were no direct incentives identified to prioritize the retention of the highest quality Marines. Although this is a primary objective of the retention process, incentives continue to be aligned toward meeting quantity objectives.

Commanders are one of the most influential stakeholders through their recommendations and have the responsibility to take action in the best interest of the Marine Corps by virtue of their authority. Analyzing the data, there is an identified bias and a tendency to inflate recommendations in pre-tier observations and continued even with the computed tier. The addition of the computed has added an objective anchor to place subjective recommendations in context, reducing the amount of inflation by commanders. Even as commanders aim to

make recommendations in the best interest of the Marine Corps, there is a tendency to view one's own Marines as better than average, reducing the impact that their positive recommendations can have in the process. Conversely, commanders' recommendations can positively impact the quality retained if their negative endorsements are given additional weight.

Career planners have an obligation to process a RELM regardless of the Marine's quality and time allowed for processing. While there is no direct evidence of RELM prioritization by EAS, the slightly lower levels of quality seen within the 0-30 day reenlistment window in pre-tier data may be a symptom of this occurrence at the unit level before the objective anchor was introduced.

MMEA has published guidance which identifies quality as an important aspect of the reenlistment process. Until recently, there was no change to the process to address this focus on quality. In the process, the FTAP Chief is the approval authority, but not denial authority, and the default decision is built into the process is approval as long as there is no misconduct in the RELM. The process is more thorough for those with misconduct, but not those who may be tier 3 or tier 4 Marines without misconduct.

In relation to a Marine's EAS, in pre-tier data, negative effects on quality were mainly evident in all three measures of quality in the 0-30 day submission window. Results from computed tier data show no evidence of this same phenomenon, suggesting that the introduction of the tiers has reduced or eliminated rushed processing of lower quality Marines. A progressive decline in commander's recommended tier for pre-tier results was seen from 91-120 days in, but this effect is not present in the computed tier data. In fact, the only significant results for computed tier data submission window indicated higher quality, but the correlation or cause relative to the time period is unknown.

What was consistent between the pre-tier and computed tier periods was that the quality of approved reenlistments does change over the course of the reenlistment year. Higher levels of quality are approved at the beginning of the

reenlistment window in July and the quality decreases throughout the entire reenlistment period with the lowest quality in May. Small improvements are observed right before the lateral move period begins. Computed tier data shows a progressive decline over the reenlistment year, but occurring periodically and the trend is more consistent between computed submitted tiers and commander's recommended tiers. Percent changes in the modified tier score from both data sets never exceed 1% and the same decline in quality is observed over the reenlistment period. Although months later in the reenlistment period are associated with lower quality, this shows a preference to approve higher quality Marines earlier in the reenlistment process.

There are clear differences between the reenlistment processes, but not a proven difference in the quality of Marine retained according to the regression results. Analyzing reenlistment data on entire eligible cohorts would allow for greater inferences about the reenlistment populations. After considering the average qualities of reenlistments from each period, specific metrics show increases, but overall quality using the three measures did not improve. Additionally, while the percentage of tier 3 and 4 Marine approved for reenlistment has decreased, 70% of tier 4 Marines are still being offered reenlistment. Marines in the bottom 10% of their reenlistment cohort may be better replaced through the accessions process.

B.   LIMITATIONS

There were several limitations in this study. I was able to gather only partial data on entire pre-tier reenlistment populations to generate a modified tier score. Additionally, there was limited archived pre-tier performance data associated with those who reenlisted. A better understanding of quality within the eligible force population could be gathered from following a cohort from initial enlistment to the decision point of reenlistment during the first-term contract. My models also did not control for differences in MOS since my focus was on aggregate quality. A more segmented study can address the changes in quality

by MOS with the computed tier cutoffs tied to the occupational specialty in question.

The lack of FY 2012 data limited the full understanding of the effects of the computed tier on identifying and retaining quality since its implementation. In order to mitigate the effects of the shortcomings in the data, I created measures of quality through a modified tier score and pre-tier computed submitted tier to make results more robust.

C.   STUDY RECOMMENDATIONS

There are several recommendations following the conclusion of this research that can be implemented to improve quality or make improvements in reenlistment quality more apparent.

There are two routing methods for RELMs depending on the presence of misconduct. If the context of the RELM contains misconduct, additional stakeholders weigh in on the validity of retaining the individual. A commander's recommendation which shows a downgrade in computed tier could be viewed as adverse material to ensure more thorough screening much like misconduct to account for factors that are seen in the command but missed by the computed tier.

The author recommends that the Marine Corps track and record quality indicators of all individuals eligible to reenlist to further identify and measure quality that can positively impact the career enlisted force. Further research is recommended due to the young age of the tier program. Follow on analysis should be completed on the fast track processing of tier 1 computed Marines since announcement of the policy in May 2013. The continued prioritization of top tier Marines should be emphasized to ensure that unit submissions reflect the policy change.

Incentives should be provided to career planners and units for increasing the number of tier 1 and 2 Marines to submit for reenlistment. Increasing the pool

of Marines who submit would provide the Marine Corps with the ability to be more selective and reduce the percent of tier 4 Marines approved for reenlistment. The career force "requirement" is primarily quantity driven but increases in the reenlistment pool can shift the focus more to quality.

Additionally, updates to Marine Corps Order 1040.31 should be made to include modifications such as the computed tier. Understandably, changes to retention policies during a drawdown are constant and currently published policies have not been consolidated into the retention order. The Marine Corps should continue the 100 percent contact policy for reenlistments and archive data on each fiscal year's FTAP population. The analysis of historical data can help predict trends in force propensities and identify qualities within reenlistment subpopulations to better manage careerist experience levels.

D.   RECOMMENDATIONS FOR FUTURE RESEARCH

The following questions and discussion points are relevant for future research in the subject of enlisted retention. Many are products of the research initiated on the computed tier reenlistment process and a better understanding of stakeholder involvement.

How do we increase the number of tier 1 Marines who apply for reenlistment? Are reenlistment incentives the correct means or can we improve quality by better recruiting and screening Marines? This raises the question of whether measures of recruit quality should be changed to better predict potential at the earliest point and what controls can be added to ensure a consistent increase in quality in the force. Tying into recruiting, the cost/benefit of retaining a tier 4 Marine over increasing the accession requirement for a FTAP quota can also be reviewed.

The career planner is relied upon heavily to ensure the reenlistment of Marines, but has the career planner's role changed over the course of time to the

point that they are not as effective in the retention mission? The responsibilities of a career planner are not only on FTAP Marines, but STAP and transitioning personnel.

Updates to Marine Corps Order 1040.31 should be made to include modifications such as the computed tier. To address any concern regarding the validity of the computed tier in capturing and accurately measuring the leadership potential and other intangible qualities of a Marine, the proficiency and conduct rating scale should be reevaluated. By their definitions as listed in the IRAM, the proficiency and conduct scores are indicators of a Marine's leadership, initiative, bearing, and physical and moral fitness (USMC, 2000).

Additionally, rifle scores are less correlated to a Marine's computed tier than any of the contributing factors. This may indicate that rifle scores are not good predictors of success or if they are, they should be more heavily weighted. In contrast, MCMAP belt points are highly correlated to a Marine's computed tier, but the point value for this metric is insignificant. Other skills or milestones such as education attainment or professional qualifications could be incorporated to better differentiate between Marines. Research into predictors of success in FTAP Marines is recommended to improve the computed tier.

Overall, the combination of objective and subjective components add validity to the RELM in assessing a Marine's potential for future service. The strength of the tier system is that a comparative ranking for each year cohort is provided and adjusts accordingly. The Marine Corps has improved procedures to assist with the selection of the most highly qualified rather than the selection of merely the "first to volunteer." An increase in quality is possible if incentives are properly aligned to take advantage of available information both at the unit and MMEA level.

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